

Weather-Resistant Enclosures

Models ENC10/12, ENC12/14, ENC14/16, ENC16/18

Campbell Scientific provides fiberglass-reinforced polyester enclosures for housing our dataloggers and peripherals. These non-corrosive, white enclosures are UV-stabilized and reflect solar radiation, reducing temperature gradients inside the enclosure without requiring a separate radiation shield. Dataloggers and peripherals housed in an enclosure with desiccant are protected from water and most pollutants.

The NEMA 4X enclosures (modified for cable entry) include a door gasket, external grounding lug, stainless steel hinge, lockable hasp, desiccant, humidity indicators, and sensor cable ties. An optional CS210 Enclosure Humidity Sensor is available to monitor relative humidity inside the enclosure. The housings attach either to a flat surface, vertical mast (1" to 1.5" IPS Schedule 40 pipe; O.D. 1.00" to 2.00"), tripod, or tower.

Dataloggers, peripherals, and brackets are mounted on an internal backplate punched with a grid of one-inch-on-center holes. This mounting scheme simplifies system configuration and facilitates addition and removal of equipment in the field.

Models Available

ENC10/12

Campbell Scientific's ENC10/12 enclosure has internal dimensions of 10" x 12" x 4.5" and weighs 9.0 lbs. It can house one CR200-series datalogger, power supply, and one small peripheral. A CR800, CR850, or CR1000 can also be housed in the ENC10/12 if the #17565 stack mounting kit is used. For peripherals that are taller, a 10" x 12" enclosure that has a raised lid is available; contact Campbell Scientific for more information.

ENC12/14

With internal dimensions of 12" x 14" x 5.5", the ENC12/14 can house one CR200-series, CR800, CR850, CR1000, or CR3000 datalogger, power supply, and one or more peripherals (depending on the peripheral's footprint). It weighs 11.2 lbs.

ENC14/16

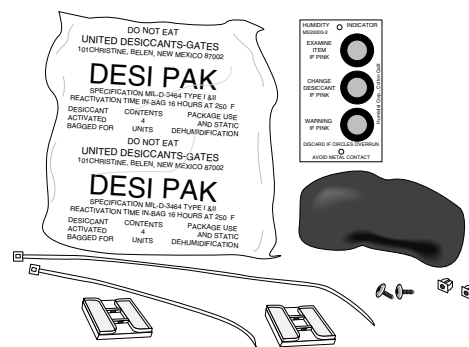
This enclosure has internal dimensions of 14" x 16" x 5.5". It can house one CR200-series, CR800, CR850, CR1000, CR3000, or CR5000 datalogger, power supply, and one or more peripherals (depending on the peripheral's footprint).

ENC16/18

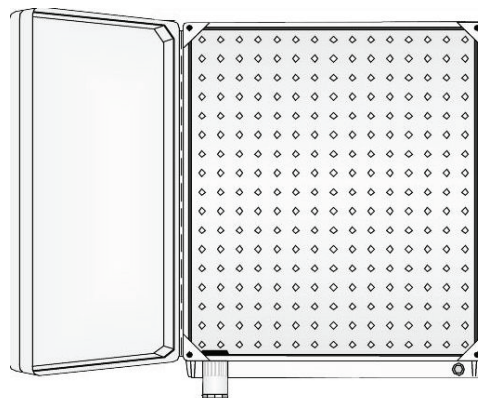
Our largest enclosure provides internal dimensions of 16" x 18" x 9" and weighs 17 lbs. It can house one CR200-series, CR800, CR850, CR1000, CR3000, or CR5000 datalogger, power supply, and two or more peripherals (depending on the peripheral's footprint).



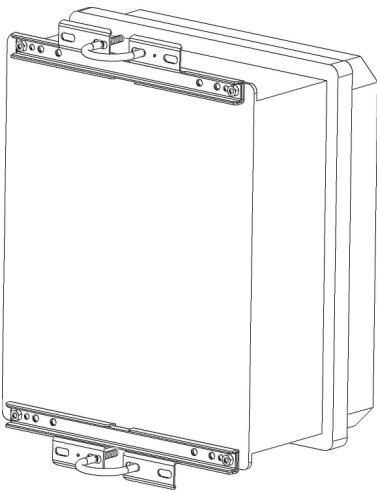
The optional CS210 Enclosure Humidity Sensor contains an Elan HM2000-series precision bulk polymer relative humidity sensor. The desiccant should be exchanged when the sensor indicates an RH level of 40% or more inside of the enclosure.



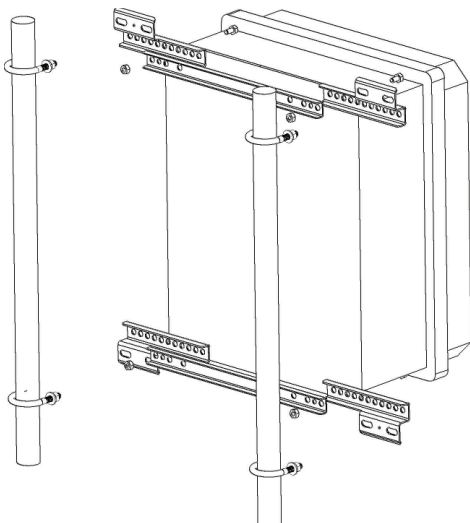
The enclosure supply kit is shipped with our enclosures. It includes dessicant, a humidity indicator card, cable ties, wire tie tabs, putty for sealing the conduit, and screws and grommets for attaching peripherals to the enclosure backplate.



The backplate provides a grid of one-inch-on-center holes for mounting dataloggers, peripherals and brackets.



The above enclosure is configured with the "-MM" bracket option and is ready to be attached to a mast or user-supplied pole.



This exploded view of the "-TM" option shows the bracket components and how the enclosure attaches to a tower.

Mounting Bracket Options

Order the "-MM" option if you want to mount your enclosure to the mast of one of our tripods or to a user-supplied pole with a 1.25" to 2.1" OD. A three-piece bracket attaches to the top of the enclosure and an identical three-piece bracket attaches to the bottom of the enclosure (see illustrations at right). Each bracket is attached to the mast or pole via a 2" u-bolt.

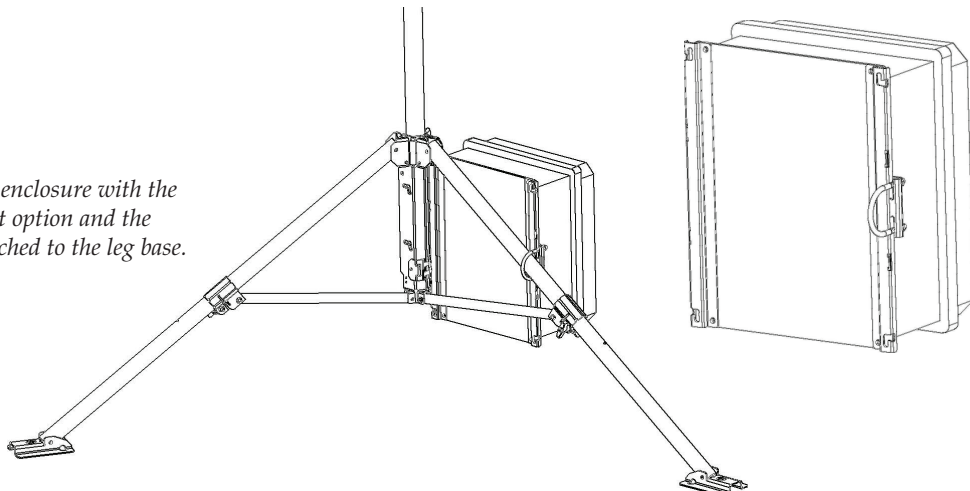
Order the "-TM" option if you want to mount your enclosure to a UT10, UT20, or UT30 tower. This mounting bracket option uses the same three-piece brackets as the "-MM" option, except the pieces are rearranged so that the flanges are on the side of the bracket instead of in the middle. Four 1.5" u-bolts attach the brackets to the tower legs.

Please note that enclosures with the "-TM" option are shipped configured for the UT10 tower. UT20 and UT30 customers will need to: (1) remove the bolts attaching the bracket to the enclosure, (2) slide out the flange sections so that the distance between the center of each flange is 17", and (3) reattach the bracket to the enclosure using the original bolts.

The "-LM" option allows the enclosure to be attached to the leg base of a CM110, CM115, or CM120 lightweight tripod. This option includes a metal flange, two brackets, and a 2.5" u-bolt. The brackets attach to the right and left side of the enclosure, and the flange attaches to the tripod near the mast. The flange fits into a notch in one of the brackets, and the other bracket connects to a tripod leg via the u-bolt. Please note that the "-LM" option is not offered for our ENC16/18 enclosures. Two enclosures may be mounted back-to-back in this configuration.

Special brackets are also available for attaching enclosures to Rohn Towers, Aluma Towers, or other non-Campbell Scientific instrument mounts. Contact Campbell Scientific for more information.

At right is an enclosure with the "-LM" bracket option and the enclosure attached to the leg base.



Cable-entry Options

Conduit(s)

Cable entry option "-SC" provides one 1.25" diameter port, and cable entry option "-DC" provides two 1.25" diameter ports. Multiple cables can use the conduit(s). Both of these options include putty for sealing the port(s) and an internal plug that can reduce the port(s) to a 0.5" diameter.

Entry Seals (individual compression fittings)

Choose the "-ES" entry seals option for a more water-tight seal. With this option, each entry seal is compressed around one cable to provide an air-tight seal. A small vent is included to equalize pressure with the atmosphere. Please note that the entry seal option is not offered for the ENC14/16. The number and size of seals provided for our enclosures are as follows:

- **ENC10/12** (1) Medium—accepts 0.231" to 0.394" cables
(2) Small—accepts 0.118" to 0.275" cables
- **ENC12/14** (2) Medium—accepts 0.231" to 0.394" cables
(4) Small—accepts 0.118" to 0.275" cables
- **ENC16/18** (2) Large—accepts 0.236" to 0.512" cables
(2) Medium—accepts 0.231" to 0.394" cables
(2) Small—accepts 0.118" to 0.275" cables

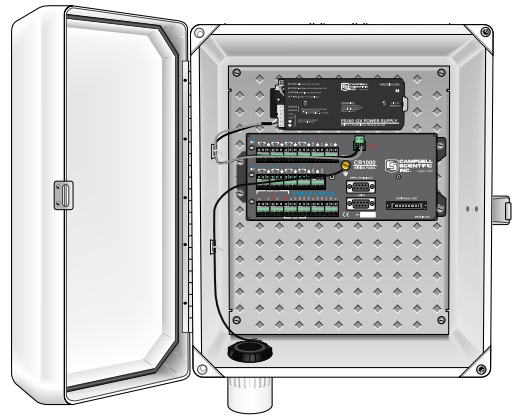
Accessory Installations

Campbell Scientific offers several accessories that can be installed in or attached to the door or case of an enclosure. Typically they are purchased when the enclosure is ordered.

Antenna Cable/Bulkhead

These accessories are offered for enclosures that will house a cellular phone, satellite transmitter, or radio. When ordered, Campbell Scientific will punch a special bulkhead hole in the enclosure and install a 17" cable. Available antenna cable/bulkhead accessories are:

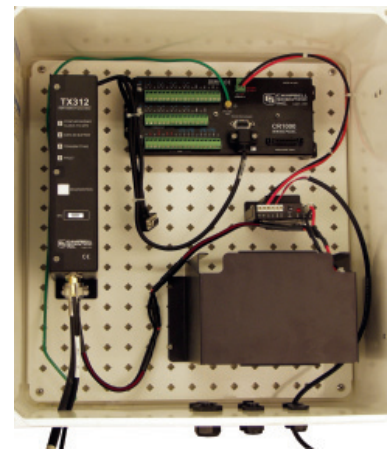
- 19335 Type N-to-RPSMA Antenna Cable for our RF400-series spread spectrum radios or CR200-series dataloggers
- 19333 Type N-to-TNC Antenna Cable for our Raven100 or Raven110 digital cellular modems
- 19332 Type N-to-Type N Antenna Cable for our RF310-series narrow-band radios, TX312 HDR GOES satellite transmitter, or FGR-115 radios
- 19336 Type SMA-to-SMA Antenna Cable for the GPS device used with our satellite transmitter
- 19334 Type N-to-SMA Antenna Cable for our RF450 radio



An enclosure with the "-SC" option includes one 1.25" diameter port for cable entry. Shown is an ENC12/14 housing a CR1000 datalogger and PS100 power supply.



Above is the outside of an ENC16/18 with the -ES cable entry option and 19332 Antenna Cable/Bulkhead accessory.



This ENC16/18 with the -ES cable entry option and 19332 Antenna Cable/Bulkhead accessory houses the equipment commonly used in a GOES satellite system.

CD294 Data View Display

Specify #16737 to have Campbell Scientific install a CD294 Data View Display in the enclosure door. The CD294 is a two-line, 32-character LCD that is used with mixed-array dataloggers (e.g., CR510, CR10X). When the CD294 is installed in an enclosure door, you can view real-time data on-site without opening the enclosure. A stainless steel cover is provided to help protect the display from the effects of ultraviolet radiation.

CD295 Data View II Display

Specify #18132 to have Campbell Scientific install a CD295 Data View II Display in the enclosure door. The CD295 is a two-line, 32-character LCD that is used with PAKBUS® dataloggers (e.g., CR200, CR800, CR1000, CR3000). When the CD295 is installed in an enclosure door, you can view real-time data on-site without opening the enclosure. A stainless steel cover is provided to help protect the display from the effects of ultraviolet radiation.



When a CD295 DataView II is installed in an enclosure door, you can view real-time data in the field without opening the enclosure.

SC-IRDA Infrared Interface

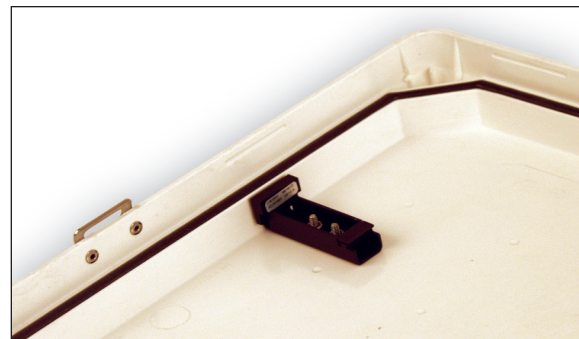
Campbell Scientific will install an SC-IRDA Infrared Interface in the enclosure's case when you specify #17206. The SC-IRDA provides an infrared interface that facilitates communication between the datalogger and an infrared-equipped PDA. This device allows you to interrogate the datalogger on-site without opening the enclosure. PConnect or PConnectCE software is required. The SC-IRDA is secured and sealed in the enclosure with a compression fitting.

Enclosure Door Switch Indicator

Specify #18166 to have Campbell Scientific install an enclosure door switch indicator or specify #18165 to have the customer install the indicator. This small accessory monitors when the door of the enclosure is open. It consists of an actuator and a magnetic switch—one is located on the case side, the other on the door side of the enclosure. The switch is monitored with a control port on the datalogger.



Above is a closeup of the SC-IRDA Interface mounted in an enclosure compression fitting. To communicate with the datalogger, point the PDA's IRDA sensor at the SC-IRDA sensor head exposed on the outside of the enclosure.



On the ENC10/12 and ENC12/14, the actuator (above left) for the door switch indicator is attached to the enclosure case and the switch (above right) is attached to the enclosure door. For the other enclosures, the actuator is attached to the door and the switch is attached to the case.

